

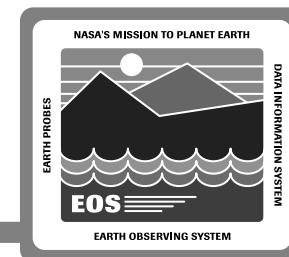


DAAC Mission Requirements

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ECS Release B Mission Requirements for GSFC DAAC



Support operations for TRMM

- Archival and access /distribution of TRMM VIRS data products
 - Ingest rate VIRS products from TSDIS (1.4 GB/day)
- Provide TSDIS access to ancillary products
- Support delivery of products to TSDIS for reprocessing (1.5 GB/day)
- Support Ingest/Archive of reprocessed VIRS data (2.8 GB/day)

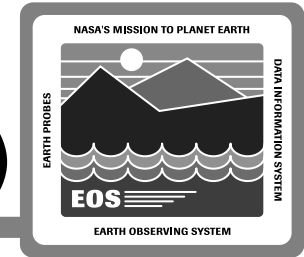
Support access to V0 data products

- Migration of products (At start of and during release operations)
- Interoperability with V0 system for access for remaining
- Total Migrated - 10.7 Tbytes

Support algorithm integration and test for AM-1 MODIS instrument and COLOR

- Note: all of these requirements continue from Release A

ECS Release B Mission Requirements for GSFC DAAC (cont.)



Support operations for AM-1

- **Ingest MODIS level 0 (67 GB/day)**
- **Produce MODIS higher level Products**
 - **Processing peak load (59 GFLOPS including reprocessing at L+ 2 yrs)**
 - **Peak Archive Volume (403 GB/day)**
 - **Distribute 167 GB/day to EDC and 2.4 GB/day to NSIDC for archive**
- **Support Data Assimilation Office product generation**
 - **Processing Peak load (100 GFLOPS @ end of contract)**
 - **Provide archiving volume (2 GB/day)**
 - **Provide access to other required ECS products**

Produce COLOR products

- **Level 0 ingest (3.8 GB/day)**
- **Processing peak load (.6 GFLOPS including reprocessing at L+ 2 yrs)**
- **Peak Archive Volume (10 GB/day)**

Support access/distribution of products

- **Product QA at SCFs/ Product Dependencies/User Access**

ECS Release B Mission Requirements for LaRC DAAC



Support operations for TRMM

- Ingest CERES level 0 from SDPF (90 MB/day)
- Produce CERES higher level Products
 - Processing peak load (15 GFLOPS including reprocessing at L+ 2 yrs)
 - Peak Archive Volume (11 GB/day)
- Archival and access/distribution of TRMM CERES data products

Support access to V0 data products

- Migration of products (At start of and during release operations)
- Interoperability with V0 system for access for remaining
- Total Migrated - 1.8 Tbytes

Support algorithm integration and test for AM-1 CERES, MOPPIT and MISR instruments

- **Note:** all of these requirements continue from Release A

ECS Release B Mission Requirements for LaRC DAAC (cont.)



Support operations for AM-1

- **Ingest CERES/MOPPIT/MISR level 0 from EDOS (41.3 GB/day)**
- **Produce CERES/MOPPIT/MISR higher level Products**
 - **Processing peak load (34/.06/58 GFLOPS including reprocessing at L+ 2 yrs)**
 - **Peak Archive Volume (12/.2/36 GB/day)**

Produce ACRIM/SAGE III higher level products

- **Ingest level 0 (11/262 MB/day)**
- **Processing peak load (.1/2 MFLOPS including reprocessing at L+ 2 yrs)**
- **Peak Archive Volume (.06/.3 GB/day)**

Support algorithm integration and test for SAGE III and ACRIM

Support access/distribution of products

- **Product QA at SCFs**
- **Product Dependencies**
- **User access**

ECS Release B Mission Requirements for MSFC DAAC



Support operations for TRMM

- Ingest LIS level 0 from SDPF (65 MB/day)
- Produce LIS higher level Products
 - Processing peak load (7 MFLOPS including reprocessing at L+ 2 yrs)
 - Peak Archive Volume (1.3 GB/day)
- Provide SSM/I & GPCP data from MSFC for use as ancillary product to TSDIS
- Provide for storage of TSDIS products for PR, TMI, and GV (~ 13 GB/day for standard production and ~26 GB/day for reprocessing)
- Provide data to TSDIS for reprocessing (Rate of up to 2 x ingest)
- Distribute TMI data to LaRC for use in CERES processing
- Support user access of TSDIS products

Support access to V0 data products

- Migration of products (At start of and during release operations)
- Interoperability with V0 system for access for remaining products
- Total Migrated - 2.5 Tbytes

- **Note:** all of these requirements continue from Release A

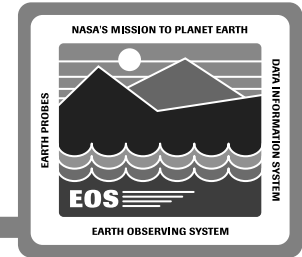
ECS Release B Mission Requirements for EDC DAAC



Support operations for AM-1

- Ingest MODIS data from GSFC (167 GB/day)
- Produce MODIS higher level land products
 - Processing peak load (.7 GFLOPS including reprocessing at L+ 2 yrs)
 - Peak Archive Volume (225 GB/day including 167 GB/day from GSFC)
- Ingest (via media) ASTER Level 1 data from ASTER GDS (22 GB/day L1A, 44 GB/day L1B)
- Produce ASTER higher level land products
 - Processing peak load (1.7 GFLOPS including reprocessing at L+ 2 yrs)
 - Peak Archive Volume (119 GB/day)

ECS Release B Mission Requirements for EDC DAAC



Support Landsat-7

- **Ingest/archive 140 GB/day**
- **Ingest IGS catalog information**

Support access to V0 data products

- **Migration of products (At start of and during release operations)**
- **Interoperability with V0 system for access for remaining products**
- **Total Migrated - 20.9 Tbytes**

Support access/distribution of products

- **Product QA at SCFs**
- **Product Dependencies**
- **User access**

ECS Release B Mission Requirements for JPL DAAC



Produce SeaWinds/SSALT higher level products

- **Ingest level 0 (55/15 MB/day)**
- **Processing peak load (15/76 MFLOPS including reprocessing at L+ 2 yrs)**
- **Peak Archive Volume (.6/.2 GB/day)**
- **Ingest AMSU data from Japan for use as SeaWinds ancillary data**

Support access to V0 data products

- **Migration of products (At start of and during release operations)**
- **Interoperability with V0 system for access for remaining products**
- **Total Migrated - 8.3 Tbytes**

Support access/distribution of products

- **Product QA at SCFs**
- **Product Dependencies**
- **User access**

ECS Release B Mission Requirements for NSIDC DAAC



Support operations for AM-1

- Ingest MODIS data from GSFC (2.4 GB/day)
- Produce MODIS higher level land products
 - Processing peak load (16 MFLOPS including reprocessing at L+ 2 yrs)
 - Peak Archive Volume (5 GB/day including 2.4 GB/day from GSFC)

Support access to V0 data products

- Migration of products (At start of and during release operations)
- Interoperability with V0 system for access for remaining products
- Total migrated - 220 Gbytes

Support access/distribution of products

- Product QA at SCFs
- Product Dependencies
- User access

ECS Release B Mission Requirements for ORNL DAAC



ECS delivers “IMS” functionality

- **S/W and H/W components of certain ECS subsystems**
 - **Data Management (LIM and DIM)**
 - **Interoperability (Advertising service)**
 - **Data Server (Subset required to support metadata management, metadata storage and metadata searching)**
 - **Client Subsystem**
 - **CSMS Management Subsystem (Manage ECS-provided components)**
 - **CSMS Communication Subsystem**
 - **CSMS Internetworking Subsystem (LANs to connect the above components and networking I/Fs to other ORNL LANs, NSI, and ESN)**
- **Archive portion of Data Server Provided by ORNL**
 - **ORNL responsibility to interface ORNL-developed archive to ECS-provided Data Server component**
 - **Technical support LOE provided by ECS**

ECS Release B Mission Requirements for CIESIN DAAC



ECS will make Release B developed S/W available to CIESIN
CIESIN is responsible for purchasing all COTS (S/W and H/W) required
CIESIN responsible for configuring operational system at SEDAC
ECS will provide LOE technical support to CIESIN
Effort included to test interoperability of CIESIN with remaining ECS

ECS Release B Mission Requirements for ASF DAAC



Following items provided in scope of contract

- **Maintain Catalog of raw signal data from ERS-1/2, JERS-1, RADARSAT**
 - **No archive of raw data provided by ECS**
- **Maintain catalog/archive of low res level 1 products (Migrate existing)**
- **Maintain catalog/archive of derived level 2 products (Migrate existing)**
- **Temporary storage of high res level 1 products (for distribution)**
- **Access/distribution of data from archive**
- **User interface to request production of product from raw data**
 - **Processing request submit to ASF production system**
 - **Results forward to ECS for distribution and archive if appropriate**
- **User I/F to guide information and browse data (If generated by ASF)**
- **Canadian Space Agency (CSA) catalog interoperability**
- **ECS provides billing/accounting for user orders of ASF products**
- **ECS provides system management for ECS-provided systems and System history statistics API for use by ASF-provided systems (requires ASF DAAC-unique activities)**

ASF Recommended Requirements



Archive/Access to ancillary data

- Estimated to be small amount of data (Average less than 1 MB/day, some sizes still TBD)
- Large number (~ 50) of small files
- Impact mostly in area of data modeling assuming minimal provided access services
 - Alternative is for ASF to provide a DAAC-unique storage system for this data

I/F to film production equipment

- Will require specific data reformatting
- Requested interface information to assess impact
 - Alternative is for ASF to provide DAAC-unique service to reformat ECS data as required to interface to film production system

ASF Recommended Requirements (cont.)



Handling of ASF accounts payable with billing/accounting system

- **Current baseline has accounts payable only for the SMC**
 - **Alternative for ASF to provide their accounts payable system**

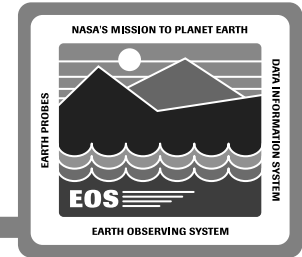
Level of involvement in ASF system-wide statistical accounting/reporting

- **Assume we only provide definition of API**
 - **Any ASF specific reports generated by ASF DAAC**

Manage US allocation of RADARSAT resources

- **US is limited (in time) to amount of data that may be collected**
 - **First preference is to have this performed by the ASF Acquisition Planning System.**
 - **Alternative could be for ECS to monitor at receipt of raw signal data catalog**

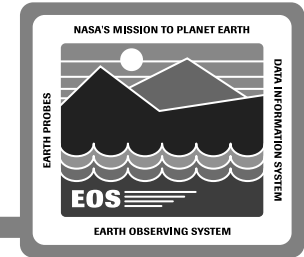
ASF Recommended Requirements (cont.)



User I/F for submittal of ASF DARs

- 3 options being considered
- a) text form
- b) Interface using satellite/instrument swath planning tool
- c) Integrated as part of data query I/F (Archived/Planned/Submit DAR)
 - Alternative for ASF to develop the selected option(s) as DAAC-unique extension(s) to ECS

ASF Capacity Baseline



In contract requirement for storage and access to 14.7 TBytes of data

- **Migrated data from V0 when we transition**
- **Operation receipt of data after transition at Release B**

Current preliminary sizing numbers are much smaller (< 4 TBytes)

May allow tradeoff of archive volume for other requirements